SANTA CRUZ BIOTECHNOLOGY, INC.

Astrotactin siRNA (h): sc-60216

BACKGROUND

Neuronal migration of the central nervous system is a specialized form of cell motility that takes place in the laminar structure of the cortical regions of brain. Astrotactin is a neuronal cell surface protein that is expressed on postmitotic neuronal precursors in the cerebellum, hippocampus, cerebrum and olfactory bulb. It mediates neuron-astroglial interactions and is also implicated in synaptic development as well as many other neuronal activities. Astrotactin has three epidermal growth factor repeat domains and two Fibronectin type III repeat domains. The human Astrotactin gene maps to 1q25.2 and shows extensive homology to the mouse Astrotactin gene. Mutations in the Astrotactin gene are linked to neuronal migration defects in both species.

REFERENCES

1. Edmondson, J.C., et al. 1988. Astrotactin: a novel neuronal cell surface antigen that mediates neuron-astroglial interactions in cerebellar microcultures. J. Cell Biol. 106: 505-517.
2. Stitt, T.N., et al. 1990. Antibodies that recognize astrotactin block granule neuron binding to astroglia. Neuron 5: 639-649.
3. Fishell, G., et al. 1992. Astrotactin provides a receptor system for CNS neuronal migration. Development 113: 755-765.
4. Zheng, C., et al. 1996. CNS gene encoding Astrotactin, which supports neuronal migration along glial fibers. Science 272: 417-419.
5. Adams, N.C., et al. 2002. Mice that lack astrotactin have slowed neuronal migration. Development 129: 965-972.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600904. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Chen, Y.T., et al. 2005. Deficits in motor coordination with aberrant cerebellar development in mice lacking testicular orphan nuclear receptor 4. Mol. Cell. Biol. 25: 2722-2732.

CHROMOSOMAL LOCATION

Genetic locus: ASTN1 (human) mapping to 1q25.2.

PRODUCT

Astrotactin siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Astrotactin shRNA Plasmid (h): sc-60216-SH and Astrotactin shRNA (h) Lentiviral Particles: sc-60216-V as alternate gene silencing products.

For independent verification of Astrotactin (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60216A, sc-60216B and sc-60216C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCL, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Astrotactin siRNA (h) is recommended for the inhibition of Astrotactin expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Astrotactin (H-9): sc-514299 is recommended as a control antibody for monitoring of Astrotactin gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Astrotactin gene expression knockdown using RT-PCR Primer: Astrotactin (h)-PR: sc-60216-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.